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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,511	10/06/2000	Raymond Andersen	P108281-0000	6795

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EXAMINER

LUKTON, DAVID

ART UNIT PAPER NUMBER

1654

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/581,511

Applicant(s)

ANDERSEN ET AL.

Examiner

David Lukton

Art Unit

1654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-25,27,29,31-66 and 68-78 is/are pending in the application.
- 4a) Of the above claim(s) 24,27,29,34,36,59,60,62 and 74 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25,31-33,35,37-58,63-66 and 68-72 is/are allowed.
- 6) ☒ Claim(s) 23,61,73 and 75-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Pursuant to the directives of the amendment filed 9/14/05, claims 23, 61, 75-78 have been amended. In addition, claim 66 is characterized by applicants as "currently amended", yet no change in the claim is indicated. Clarification is sought regarding the status of claim 66. Claims 23-25, 27, 29, 31-66, 68-78 remain pending. Claim 74 remains withdrawn from consideration pursuant to the original restriction. Claims 24, 27, 29, 34, 36, 59, 60, 62 are withdrawn from consideration, since they do not encompass the elected specie. The following claims are examined in this Office action: 23, 25, 31-33, 35, 37-58, 61, 63-66, 68-73, 75-78.

Applicants' arguments filed 9/14/05 have been considered and found persuasive in part. For purposes of this Office action, the characterization of "allowable" is applied to each of the following claims: 25, 31-33, 35, 37-58, 63-66, 68-72.

Applicants' arguments filed 9/14/05 have been considered and found persuasive in part.

- The rejection of claims 23 and 61 as anticipated by Falender (*Biocatalysis and Biotransformation* 13(2), 131-139, 1995) is withdrawn.
- The rejection of claims 23 as obvious over Falender (*Biocatalysis and Biotransformation* 13(2), 131-139, 1995) is withdrawn.
- The rejection of claims 23, 61, 75 as anticipated by Baldwin (*J. Chem. Soc., Chem. Comm.* (16), 1280-1, 1986) is withdrawn.
- The rejection of claims 61 and 75 as anticipated by Reetz (*Angew. Chem., Int. Ed. Engl.*, 31(12), 1626-9, 1992) is withdrawn.

- The rejection of claims 23, 61, 75 as anticipated by Chang (*Bioorganic & Medicinal Chemistry Letters* 2(10), 1207-12, 1992) is withdrawn.
- The rejection of claim 75 as anticipated by Webber (USP 6,214,799) is withdrawn.



Claim 73 is rejected under 35 U.S.C. § 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Line 2 of claim 73 recites the following phrase:

“having the formula having the formula”

This contains an obvious typographical error.

- Claim 73 implies that it is possible to have a salt that is fully defined by formula I. It is the position of the examiner that it is physically impossible to have a salt that is fully defined by formula I. By appropriate use of the word “thereof”, however, this issue can be resolved.
- Claim 73 is drawn to a pharmaceutical composition. A composition, however, must contain at least two compounds, or at least one compound and an additional material or substance. If a person is in possession of a single, pure compound, then that person is not in possession of a composition. Thus, claim 73 effectively mandates the presence of a second compound, while at the same time not identifying it. One option would be the following:

A pharmaceutical composition comprising a pharmaceutically acceptable carrier in combination with a compound of formula I, or a salt thereof:



The following is a quotation of the appropriate paragraphs of 35 U.S.C §102 that form the basis for the rejections under this section made in this action.

A person shall be entitled to a patent unless -

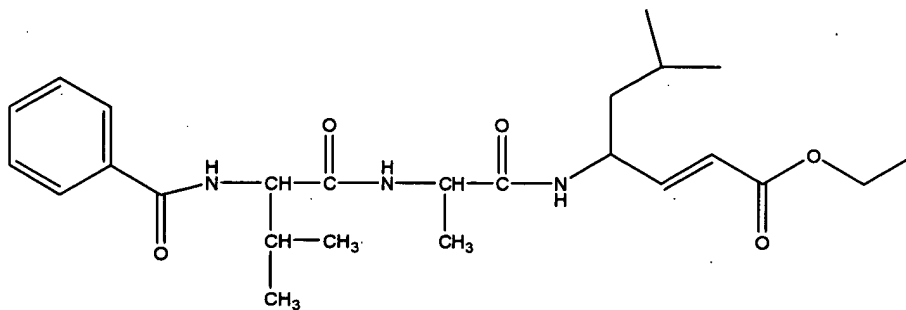
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 23, 61, 73, 76 are rejected under 35 U.S.C. §102(a) as being anticipated by Johnson (WO 97/04004).

As indicated previously, Johnson discloses compound 26 (page 74), which has the following structure:



This compound is encompassed by claims 23 and 61 when the substituent variables are as follows:

R1 = benzoyl;
R2 = hydrogen;
R3 = methyl;
R4 = methyl;
R5 = hydrogen;
R6 = hydrogen
R7 = methyl
R8 = hydrogen
Y = propylene substituted with isobutyl
Z = -O-CH₂-CH₃

Claim 76 is anticipated because of the term "having" in the claims

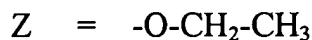
Thus, the claims are anticipated.



Claim 76 is rejected under 35 U.S.C. §102(b) as being anticipated by Reetz (*Angew. Chem., Int. Ed. Engl.*, 31(12), 1626-9, 1992).

Reetz discloses compound 11 (page 1627, col 2). This compound would correspond to the substituent variables of the claims as follows, if not for one of the provisos:

R1 = hydrogen
R2 = tBoc
R3 = hydrogen
R4 = hydrogen
R5 = phenyl
R6 = hydrogen
R7 = methyl
R8 = hydrogen
Y = propylene substituted with isobutyl



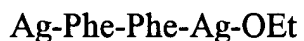
As it happens, the cited claims exclude the possibility that R₂ (or R₁) can be *tert*-butyloxycarbonyl. However, the claims are drawn to a compound "having" the indicated structure. That is, the claim is not drawn to a compound "of" the formula; rather, the claim is drawn to a compound "having" the indicated formula. As such, the claim would permit additional substituents to be added to the N- or C-terminus. This ground of rejection then is not based on R₂ being tBoc; rather, it is based on R₁ and R₂ both representing hydrogen. Since the claimed peptide "has" the indicated structure, rather than consists of it, the claims would permit an additional substituent, such as tBoc, to be bonded to the N-terminus. The same argument applies in the case of "Z".

Thus, the claim is anticipated.



Claim 76 is rejected under 35 U.S.C. §102(b) as being anticipated by Falender (*Biocatalysis and Biotransformation* 13(2), 131-139, 1995).

Falender discloses the following compound on page 134 ("Ag" represents allylglycine):



The disclosed compound would be encompassed by the claims if the substituent variables could be as follows:

R1 = allylglycine;
R2 = hydrogen;
R3 = hydrogen;
R4 = hydrogen;
R5 = phenyl;
R6 = hydrogen;
R7 = benzyl;
R8 = hydrogen;
Y = butene;
Z = -O-CH₂-CH₃

Claim 23 excludes allylglycine as a possibility for R1; however, R1 and R2 can both be hydrogen. This ground of rejection is justified because of the term "having" in the claim. This term permits additional substituents at the C- and/or N-terminus for the case of R1 and R2 both representing hydrogen.

Thus, the claim is anticipated.



Claims 73 and 76 are rejected under 35 U.S.C. §102(b) as being anticipated by Chang, L. L. (*Bioorganic & Medicinal Chemistry Letters* 2(10), 1207-12, 1992).

Chang discloses (page 1210) compound 25, which has the following structure ("Xaa" represents allylglycine):

Tyr-Val-Val-Asn-Asp-Xaa

The disclosed compound is encompassed by the instant claims when the substituent variables are as follows:

R1 = hydrogen;
R2 = hydrogen;
R3 = hydrogen;
R4 = hydrogen;
R5 = -CO-NH₂
R6 = hydrogen;
R7 = -CH₂-COOH
R8 = hydrogen;
Y = butene;
Z = -OH

When the substituent variables correspond as indicated above, the result is the following tripeptide: Asn-Asp-Xaa. However, the claim is drawn to a peptide "having" the indicated structure, rather than consisting of it. Accordingly, additional amino acids can be added to the N-terminus.

Thus, the claim is anticipated.



Claims 73 and 76 are rejected under 35 U.S.C. §102(e) as being anticipated by Webber (USP 6,214,799).

Webber teaches various compounds falling within the scope of claim 1. For example, at col 18, line 20+ a compound is taught. This would correspond to applicants' substituent variables as follows (R²⁰ is a variable created by the examiner), were it the case that R2 could be a benzoyl group:

Y = $-\text{CH}(\text{R}^{20})\text{CH}=\text{CH}-$ wherein R^{20} is the side chain of glutamine;
Z = $-\text{O}-\text{C}_2\text{H}_5$;
R8 = hydrogen;
R7 = benzyl;
R6 = hydrogen;
R3 = hydrogen;
R5 = hydrogen;
R4 = alkyl;
R1 = hydrogen;
R2 = a benzyl group that is "substituted" with oxo (resulting in a benzoyl group)

As it happens, claim 76 does not permit R2 to be a benzoyl group. Claim 76 does, however, permit R2 to be a hydrogen atom. In addition, the claimed compounds need not consist of the indicated formula, but rather "have" the indicated formula. Thus, the claim encompasses compounds in which the hydrogen atom is removed from the N-terminus and replaced with another substituent.

Thus, the claim is anticipated.



Claims 75, 77, 78 are rejected under 35 U.S.C. §102(e) as being anticipated by Eisenbach-Schwartz (USP 6,126,939).

Eisenbach-Schwartz discloses (col 3, line 56) the following tripeptide: Glu-Arg-Ala.

R7 = the side chain of arginine
R5 = $-\text{CH}_2-\text{COOH}$;
R1 = hydrogen
R2 = hydrogen
Y = ethyl;
Z = OH

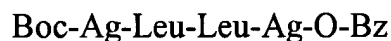
As indicated previously, claim 75 does not require "Y" to be an "unsaturated alkyl" group. Claim 75 permits variable R₉, together with the nitrogen atom to which it is bonded, to be a genetically encoded amino acid; that is, "Y" can be a "saturated moiety having a linear or branched...skeleton containing 1-10 carbon atoms". Thus, variable R₉ could represent ~~the side chain of~~ Ala, Gly, Leu, Ile, Val, Ser, or Thr. As such, claim 75 encompasses numerous tripeptides that have been previously disclosed.

Applicants have not explained why how it is possible that this ground of rejection might be invalid; accordingly, it is maintained without further argument.



Claim 76 is rejected under 35 U.S.C. §102(b) as being anticipated by Grubbs (USP 5,811,515).

Grubbs discloses the following compound at col 14, lines 10-22 ("Ag" represents allylglycine; "Bz" represents benzyl):



The disclosed compound would be encompassed by claim 23 if the substituent variables could be as follows:

R1 = allylglycine;
R2 = tBoc;
R3 = hydrogen;

R4 = hydrogen;
R5 = isopropyl;
R6 = hydrogen;
R7 = $\text{CH}_2\text{-CH}(\text{Me})_2$
R8 = hydrogen;
Y = butene;
Z = $-\text{O-CH}_2\text{-C}_6\text{H}_5$

The claim permits R2 to be hydrogen, and "Z" to be -OH. At the same time, the claim is drawn to a peptide "having" the indicated structure. As such, additional functional groups can be added to the N-terminus and the C-terminus.

Thus, the claim is anticipated.

✦

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lukton whose telephone number is 571-272-0952. The examiner can normally be reached Monday-Friday from 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell, can be reached at (571)272-0974. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.



DAVID LUKTON
PATENT EXAMINER
GROUP 1800